



## Gecko<sup>®</sup> 2 K Paper-Touch Mattlack EA

Solvent based overprint varnish for flexible packaging.  
70GL478102

70GH132871 Hardener for 2 K Systems  
70GH464418 Hardener MIL for 2 K systems

### Description

An Ethylacetate, NC-based 2-component matt varnish designed for a wide range of applications, with low odour and low solvent retention. This product provides outstanding chemical and mechanical resistance, and a special tactile paper touch effect.

### Printing process

Gravure printing.

### Applications

Surface printing.

Suitable for food and beverage packaging.

**Substrates:** PE, BOPP, Coex OPP, CPP, Acrylic OPP\*, chem PET, BOPA.  
\* Applicability on acrylic coated PP has to be industrially tested properly in relation to potential blocking risk.

**Minimum surface tension:** PE, BOPP, Coex OPP, CPP: 38 mN/m.  
BOPA: 48 mN/m (mN/m = dynes/cm)

**Hardener** Hardener for 2 K systems GA (70GH132871), standard hardener.  
Hardener MIL for 2 K systems; GA (70GH464418), alternative to use when low content of free monomeric isocyanate is required.

**Curing conditions** This product can be used only in combination with the hardener 70GH132871 or 70GH464418, with the following ratio: 100 parts of varnish, 25 parts of hardener (Temp > 10°C).  
The varnish becomes tacky-free with the usual timing of the printing process. The below mentioned fastness properties are normally achieved after 7 days at room temperature.

### Properties

Dry content 70GL478102	40% ± 2	Dry content Hardener (both)	47% ± 2
Adhesion	5	Water resistance	5
Rub resistance	4-3	Deep freeze resistance	5
Scratch resistance	5	Vegetable oil resistance	5
Heat-resistance	200° C		

Rating scale (1 to 5 based on Gecko product range) 1= worst value, 5= best value

**Note:** all technical properties are a guideline only and depend on final application. For details about exact test methods which are the basis for info about fastness properties given above please refer to the general test method overview.

## Printing viscosity

Diluents		<b>Gravure Printing</b> 13 – 18 s DIN 4	
Slow		Ethyl Acetate/n-Propyl Acetate	80:20
Standard		Ethyl Acetate	100
Fast			
Retarder		Methoxy Propyl Acetate	3% max

## Notes

**Diluents** All solvents and equipment must be water and alcohol free in order to prevent non-curing of the 2 component reaction.

**Mixing** This product must be mixed with the hardener before the dilution. After the preparation, the 2-component mixture must be used within 8 hours.  
It is recommended to prepare the 2 K mixture shortly before the start of the print run, and in the minimum appropriate amount. In case of long print runs, it is strongly suggested not to prepare all the 2 K mixture necessary for the whole job before the start, but instead to start printing with a small batch of 2 K mixture (10 – 20 kg) and regularly add to the pump tank small batches of freshly prepared 2 K mixture.

**Pot Life** With Pot Life is usually indicated the time in which a 2 component mixture can be used before it expires and is not usable anymore. In the printing industry there are various interpretation of the concept of Pot Life, some more focused on viscosity increase, other on the performance of the cured coating layer.  
In our TDS, Pot Life is in strong correlation with the increase of viscosity, and this may differ from the Pot Life correlated to physical and mechanical properties. As the decrease of properties could be effective before any increase of viscosity is visible, please test the application before industrial production and, as a general approach, prepare always the smallest quantity of 2K system necessary for the work, in order to use the 2K mixture as rapidly as possible. This is due to the fact that once the 2 Component are mixed together, the crosslinking reaction starts and stops only when all the reactive function have crosslinked with the other component of the mixture. The reaction speed is strongly dependent on the components of the system used.

**Cleaning** The cured coating is insoluble in standard solvent used for dilution. It is necessary to prevent the drying of the products during the downtime, when the press stops it is better to leave the product in slow recirculation and at the same time lift the doctor blade.

**Printing** This product can only be used for flexographic printing when rubber or ethyl acetate resistant photopolymer printing plates are used.

**Final effect** In order to achieve an adequate paper touch effect an adequate selection of the gravure cylinder or anilox rolled should be made and the following parameters

need to be monitored carefully:

Viscosity: Please follow the viscosity recommendations stated above. Even small variations in viscosity may have a significant influence on the haptic properties

Based on our experience, for flexographic printing, we recommend anilox configurations with 50 l/cm and volume 20 cm<sup>3</sup>/m<sup>2</sup> (traditional). For Gravure printing, good results can be achieved using a cylinder with 40 lines/ 80 μ engraving (better if laser autotypic).

The final requested paper effect is normally achieved applying a quantity not less than 4 g/m<sup>2</sup> (solids).

Due to the thickness and hardness of the particles responsible for the paper touch effect, a film too soft could show embossing marks on the reverse side, due to the presence of the paper touch lacquer. Therefore, the design as well as the structure of the packaging must be carefully verified in an industrial test before production.

We strongly recommend a good assessment of the packaging process before industrial production. In case of high mechanical stress for the material (e.g. via heat seal bars or transportation) we encourage to leave the highly effected areas without Papertouch lacquer in order to prevent rub off.

## **Instructions for the use of printing inks for the production of primary food packaging**

For information on the use of printing inks, varnishes and additives for the manufacture of food packaging please refer to the respective „**Statement of Composition**". This information is provided to allow the calculation of possible levels of migration of evaluated substances in a worst case situation.

The manufacturer of the finished article and the filler have the legal responsibility to prove by appropriate migration testing that it is fit for its intended purpose.

In order to maintain low residual solvents concentration in the printed film, the printer must ensure sufficient drying of the inks, especially when retarders have been added. Residual solvent content must be regularly monitored.

The inks must not be used in the manufacture of packaging where the printed ink layer is intended to come into contact with foodstuff (direct food contact).

There are restrictions for the use of printing inks for applications where temperatures above 100 °C for extended periods of time are applied. For details, please see document "Food Packaging Inks for High Temperature Applications".

## **Health & Safety**

The material safety data sheets contain all relevant information for the generation of appropriate internal plant instructions. The user is responsible for all local legislation requirements.

## **Ink Handling**

Please refer to General Guidelines for handling inks for flexible packaging.

## **Storage Conditions**

Store the material in the original packaging at a temperature not below 5°C and not in direct contact with sunlight.